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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,941	06/08/2001	Rodney Thomas Fox	08291-670001	8400

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09/23/2002

EXAMINER

GOLLAMUDI, SHARMILA S

ART UNIT PAPER NUMBER

1616

DATE MAILED: 09/23/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/720,941

Applicant(s)

FOX ET AL.

Examiner

Sharmila S. Gollamudi

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 June 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 1-16 are included in the prosecution of this application.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-7 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/28883.**

WO teaches a method of precipitating airborne particles by contacting airborne particles with liquid droplets and imparting a charge of +/- .0001 C/Kg using an aerosol device (abstract). The particles treated are within instant range (pg. 9, line 13) and the droplets are in the range of 5-100 microns (claims 5). The liquid composition is a water/hydrocarbon emulsion (pg. 4, lines 1-5). WO teaches the properties of the actuator, the diameter of the dip tube, and the characteristics of the valve impart the desired charge on the liquid droplets (pg. 4).

Although, WO does not specify that the invention is for the method of reducing inhalation of airborne particles, it is deemed obvious to one of ordinary skill in the art at the time the invention was made that removing particulates in the air reduces the chance of inhaling the particulates, thereby reducing the inhalation of airborne particles.

**Claims 8-9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/28883 in view of Grawe (54121897).**

As set forth above, WO teaches a method of precipitating airborne particles using an emulsion composition in an aerosol device.

WO does not specify the use of a surfactant or a propellant.

Grawe teaches the process of the abatement of contaminants. Grawe teaches the toxicity of airborne particles and the application of a liquid composition to encapsulate the particles for physical removal (col. 6, lines 44-50). The method may be applied via an aerosol spray (col. 6, lines 62). The composition may contain surfactants to stabilize the composition from phase separation and lower surface tension (col. 16, lines 32-35). Grawe teaches the inclusion of hydrocarbons for an aerosol device (col. 17, lines 15-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a surfactant to WO's emulsion composition since Grawe teaches the use of surfactants to stabilize emulsions from phase separation. Further, Grawe teaches the use of hydrocarbons (butane or propane) for aerosol devices.

**Claims 8-10 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/28883 in view of Kulkarni (5191149).**

As set forth above, WO teaches a method of precipitating airborne particles using an emulsion composition in an aerosol device.

WO does not specify the use of a surfactant or a propellant.

Kulkarni teaches the state of the art concerning aerosols. The reference teaches the use of pressurized gas of LPGs to spray liquids, which take the form of a mist of small liquid droplets. Aerosols may be used for numerous products such as cleaners, air

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fresheners, etc. Kulkarni teaches that aerosols contains surface-active agents, stabilizers, solvents, and may contain as much as 90% propellants. (col. 1, lines 5-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings WO and Kulkarni since Kulkarni teaches the state of art of aerosols and teaches that aerosol forms usually contain surfactants and propellants to function.

**Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/28883 in view of Kulkarni (5191149), in further view of Kalat (4110427).**

As set forth above, WO teaches a method of precipitating airborne particles using an emulsion composition in an aerosol device. Kulkarni teaches the art of aerosols.

The references do not teach instant surfactants.

Kalat teaches a water-based composition containing a powder and a hydrophobic phase (propellant). Kalat teaches polyglycerol oleate produces a strong water-in-propellant emulsion and is a good corrosion inhibitor if the composition is packaged in a metal container (col. 5, lines 15-21 and examples).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use polyglycerol oleate in WO's composition since Kalat teaches a water-based composition and teaches polyglycerol oleate produces a strong water-in-propellant emulsion which would be suitable since WO is a water- propellant based composition.

**Claims 1-4 rejected under 35 U.S.C. 103(a) as being unpatentable over Malcolm (4541844).**

Malcolm teaches a method of electrostatic particle collection by spraying liquid droplets of 60 microns or less with an electrical charge of .01 coulombs per kilogram (col. 2, lines 40-45 and claim 1). The method removes particulates between .1 and 20 microns (col. 3, lines 4-6).

Malcolm does not specify the amount of particles that do not enter the respiratory system.

Although, Malcolm does not specify that the invention is for the method of reducing inhalation of airborne particles, it is deemed obvious to one of ordinary skill in the art at the time the invention was made that by removing particulates in the air, reduces the chance of inhaling the particulates, thereby reducing the inhalation of airborne particles.

In the absence of showing otherwise and since Malcolm teaches all the limitations of claim 1, it is the position of the examiner that volume of particulates that do not enter the respiratory tract of the prior art corresponds to the instantly recited volumes.

**Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Malcolm (4541844) in view of Inculet et al (5400975).**

Malcolm teaches a method of electrostatic particle collection by spraying liquid droplets of 60 microns or less with an electrical charge of .01 coulombs per kilogram (col. 2, lines 40-45 and claim 1). The method removes particulates between .1 and 20 microns (col. 3, lines 4-6). Malcolm teaches a spray tower to apply the liquid droplets (col. 3, lines 10-50).

Malcolm does not teach using an aerosol device to apply the liquid composition.

Inculet et al teach an actuator for electrostatically charging an aerosol spray.

Inculet teaches that it is known in the art that the application of an aerosol spray may be enhanced by electrostatically charging the spray as it is dispensed from the nozzle. The spray acquires a charge and is attracted to another oppositely charged body (col. 1, lines 5-33). Further, the reference teaches aerosol dispensers are portable, self-contained, and economical (col. 2, lines 27-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an aerosol device with an actuator to dispense Malcolm's liquid droplet. One would be motivated to do so since Inculet teaches aerosol devices are portable and economical and the actuator dispenses an electrostatic charge, which is needed for Malcolm's droplets to collect particulates.

**Claim 6-10 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malcolm (4541844), in view of Inculet et al (5400975), in further view of Kulkarni (5191149).**

As set forth above, Malcolm teaches a method of particle collection by spraying liquid droplets of 60 microns or less and an electrical charge of .01 coulombs per kilogram (col. 2, lines 40-45 and claim 1). The method removes particulates between .1 and 20 microns (col. 3, lines 4-6). Inculet teaches the use of aerosol dispensers to electrostatically charge the liquid dispensed.

The references do not teach the hydrocarbons and surfactants in the liquid composition.

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Kulkarni teaches the state of the art concerning aerosols. The reference teaches the use of pressurized gas of LPGs to spray liquids, which take the form of a mist of small liquid droplets. Aerosols may be used for numerous products such as cleaners, air fresheners, etc. Kulkarni teaches that aerosols contains surface-active agents, stabilizers, solvents, and may contain as much as 90% propellants. (col. 1, lines 5-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings Malcolm, Inculet, and Kulkarni since Kulkarni teaches the state of art of aerosols and teaches that aerosol forms usually contain surfactants and propellants to function.


### **Conclusion**

Any inquiry concerning this communication from the examiner should be directed to Sharmila S. Gollamudi whose telephone number is (703) 305-2147. The examiner can be normally reached M-F from 7:30 am to 4:15pm.

If attempts to reach the examiner by the telephone are unsuccessful, the examiner's supervisor, Jose Dees, can be reached at (703) 308-4628. The fax number for this organization where this application or proceeding is assigned is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is (703) 308-1235.

SSG  


  
JOSE G. DEES  
SUPERVISORY PATENT EXAMINER

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